abcam

ab314165

Anti-Ret antibody [8D12]

Recombinant

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine), 0.88% Sodium chloride
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	8D12
Purification technique	Affinity purification
Concentration	0.8 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20 - 1/200
Notes	-

Target data

See full target information RET

Function	Receptor tyrosine-protein kinase involved in numerous cellular mechanisms including cell proliferation, neuronal navigation, cell migration, and cell differentiation in response to glia cell line-derived growth family factors (GDNF, NRTN, ARTN, PSPN and GDF15) (PubMed:20064382, PubMed:20616503, PubMed:20702524, PubMed:21357690, PubMed:21454698, PubMed:24560924, PubMed:28846097, PubMed:28846099, PubMed:28953886, PubMed:31118272). In contrast to most receptor tyrosine kinases, RET requires not only its cognate ligands but also coreceptors, for activation (PubMed:21994944, PubMed:23333276, PubMed:28846097, PubMed:28846099, PubMed:28953886). GDNF ligands (GDNF, NRTN, ARTN, PSPN and GDF15) first bind their corresponding GDNFR coreceptors (GFRA1, GFRA2, GFRA3, GFRA4 and GFRAL, respectively), triggering RET autophosphorylation and activation, leading to activation of downstream signaling pathways, including the MAPK- and AKT-signaling pathways (PubMed:21994944, PubMed:23333276, PubMed:24560924, PubMed:25242331, PubMed:28846097, PubMed:28846099, PubMed:28953886). Acts as a dependence receptor via the GDNF-GFRA1 signaling: in the presence of the ligand GDNF in somatotrophs within pituitary, promotes survival and down regulates growth hormone (GH) production, but triggers apoptosis in absence of GDNF (PubMed:20616503, PubMed:21994944). Required for the molecular mechanisms orchestration during intestine organogenesis via the ARTN-GFRA3 signaling: involved in the development of enteric nervous system and renal organogenesis during embryonic life, and promotes the formation of Peyer's patch-like structures, a major component of the gut-associated lymphoid tissue (By similarity). Mediates, through interaction with GDF15-receptor GFRAL, GDF15-induced cell-signaling in the brainstem which triggers an aversive response, characterized by nausea, vomiting, and/or loss of appetite in response to various stresses (PubMed:28846097, PubMed:28846099, PubMed:28953886). Modulates cell adhesion via its cleavage by caspase in sympathetic neurons and mediates cell migration in an integrin (e.g. ITGB1 and ITGB3)-dependent manner (PubMed:20702524, PubMed:21357690). Also active in the absence of ligand, triggering apoptosis through a mechanism that requires receptor intracellular caspase cleavage (PubMed:21357690). Triggers the differentiation of rapidly adapting (RA) mechanoreceptors (PubMed:20064382). Involved in the development of the neural crest (By similarity). Regulates nociceptor survival and size (By similarity). Phosphorylates PTK2/FAK1 (PubMed:21454698). Isoform 1. Isoform 1 in complex with GFRAL induces higher activation of MAPK-signaling pathway than isoform 2 in complex with GFRAL.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Ret also known as "rearranged during transfection" is a receptor tyrosine kinase with a mass of approximately 170-175 kDa. Scientists often study Ret because of its key role in cellular signaling pathways. It is primarily expressed in neural crest-derived cells and tissues including the kidneys and the enteric nervous system. Ret is also found in various other cell types throughout the body such as endocrine and hematopoietic tissues.
Biological function summary	The Ret protein facilitates several critical processes within the body. It functions as part of a complex with co-receptors called GFRα (GDNF family receptor alpha) which are required for binding ligands such as GDNF (glial cell line-derived neurotrophic factor). This binding activates downstream signaling pathways that influence cell growth differentiation and survival particularly within the nervous system. The proper functioning of Ret is essential for the development and maintenance of these cellular environments.
Pathways	Ret is an important component of the MAPK/ERK and PI3K/AKT signaling pathways. These pathways mediate various cellular responses including cell proliferation survival and apoptosis. The interactions of Ret with other proteins like SHC and GRB2 within these pathways create ripple effects that impact larger cellular networks. Through these pathways Ret connects with multiple proteins to modulate essential biological processes.
Associated diseases and disorders	Ret's dysregulation is closely associated with multiple endocrine neoplasia type 2 (MEN2) and Hirschsprung's disease. These conditions arise due to mutations affecting Ret's signaling capabilities. In MEN2 Ret mutations lead to uncontrolled cell growth often resulting in medullary thyroid carcinoma. Hirschsprung's disease on the other hand involves a failure in neural crest cell migration leading to

congenital gut motility issues. Researchers explore Ret's interactions with other proteins such as endothelin receptor B (EDNRB) to further understand these diseases.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

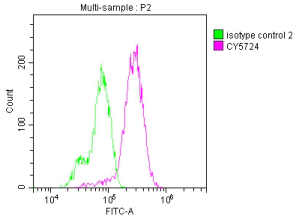
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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1 product image



Flow Cytometry (Intracellular) - Anti-Ret antibody [8D12] (ab314165)

Ret Flow Cytometry (Intracellular) staining of HeLa cells using rabbit Anti-Ret antibody

Overlay histogram showing HeLa (Human epithelial cell line from cervix adenocarcinoma) cells stained with ab314165 (pink line) at 1:50. The cells were fixed in 4% formaldehyde (15min) and permeated by 0.2% TritonX-100 for 10min. The cells were incubated in 10% normal goat serum to block non-specific protein-protein interactions followed by the antibody (1µg/1x10^6 cells) for 1 h at 4°C.The secondary antibody used was FITC-conjugated goat anti-rabbit IgG (H+L) at 1/200 dilution for 30min at 4°C. Control antibody (green line) was Rabbit IgG (1µg/1x10^6 cells) used under the same conditions. Acquisition of >10,000 events was performed.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.